



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,596	07/17/2003	Yun Shon Low	VP083	2593

20178 7590 03/17/2006

EPSON RESEARCH AND DEVELOPMENT INC  
INTELLECTUAL PROPERTY DEPT  
150 RIVER OAKS PARKWAY, SUITE 225  
SAN JOSE, CA 95134

EXAMINER

DINH, DUC Q

ART UNIT PAPER NUMBER

2674

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/621,596

Applicant(s)

SHON LOW ET AL.

Examiner

DUC Q. DINH

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                               |                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>07/17/03</u> . | 6) <input type="checkbox"/> Other: _____                                                |

### **DETAILED ACTION**

1. Applicant's election without traverse of claims 7-20 in the reply filed on December 23, 2005 is acknowledged.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 14 recites the limitation "the active period" in lines 8. There is insufficient antecedent basis for this limitation in the claim.

#### ***Claim Objections***

4. Claims 7 objected to because of the following informalities: occurrences "circuitry for" should read "a circuitry". Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 7-9, 12-16 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Torizuka et al. (U.S Patent No. 5,896,116), hereinafter, Torizuka.

In reference to claim 7, Torizuka discloses a graphics controller in Fig. 4, comprising:

Art Unit: 2674

a circuitry for updating multiple display panels (LCD 9, LCD 10) over a shared set of data lines (R, G, B) associated with the multiple display panels (display panels 9 and 10), the circuitry for updating multiple display panels includes,

a circuitry (8) for generating control signals (LCD control signal 1, LCD control signal 2) over control lines (control lines from the timing generator) dedicated to each of the multiple display panels (display panels 9 and 10);

a memory region (VTR, see Fig. 1) configured to store image data (RGB) for display on the multiple display panels (display panels 9 and 10); and

a circuitry (RGB driver and timing controller 8) configured to select image data (RGB) associated with one of the multiple display panels (9 and 10) for display during an inactive period associated with an other one of the multiple display panels (col. 4, lines 64-67, col. 5, lines 1-19; the timing generator 11 produces the first LCD control signal (1) to command the first LCD 9 to directly display the input signal inputted to the LCD 9, and the second LCD control signal to command the second LCD 10 to hold (i.e. inactive period associated with another one of the multiple display panels) the previous input signal inputted one field ago. In the case of the EVEN signal, the timing generator 11 controls the first and second LCDs 9 and 10 in the manner opposite to the control in the case of the ODD signal)

In reference to claim 8 the multiple panels include a single RGB (9) panel and a single parallel panel (10).

In reference to claim 9, Torizuka discloses the RGB decoder and RGB data driver and timing generator 8 configured to synchronize image data transfer according to a clock (1 and 2) associated with an active one of the multiple display panels (9 and 10).

In reference to claim 12, Torizuka discloses the memory region (VTR) provides all memory support for each of the multiple display panels.

In reference to claim 13, Torizuka discloses the circuitry (RGB decoder and RGB driver) configured to synchronize image data transfer according to a clock (sync) associated with an active one of the multiple display panels is further configured to select image data from the memory region according to the circuitry (timing generator 8) for generating the control signals (LCD control signals; Fig 4; col. 4, lines 30-50).

In reference to claim 14, Torizuka discloses a device (Fig. 4), comprising:

multiple display panels (LCD 9 and LCD 10);

a graphics controller (Fig. 4) configured to drive the multiple display panels over a shared set of data lines (RGB), the graphics controller including circuitry (RGB decoder 4 and RGB driver 5, timing generator 8) configured to select image data associated with one of the multiple display panels for display during an inactive period (hold period of the first display) associated with an other one of the multiple display panels; and

a shared clock (clock control signal generated by the timing generator 8) configured to synchronize image data transfer based upon a clock rate associated with the active period (write period for the second display; col. 5, lines 1-15).

In reference to claim 15, Torizuka discloses and RGB panel (9) and a parallel panel (10).

In reference to claims 16, Torizuka discloses each of the multiple display panels is associated with a different clock rate (col. 5, lines 5-15).

In reference to claim 19, Torizuka discloses the graphics controller further includes, a memory (VTR, Fig. 1) shared by each of the multiple display panels (9 and 10).

In reference to claim 20, Torizuka discloses circuitry (timing generator 8) configured to select image data includes control logic configured to generate control signals (LCD control signal 1, LCD control signal 2) associated with the one of the multiple display panels (9 and 10).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Torizuka in view of Applicant Admitted Prior Art, AAPA [0006].

In reference to claims 11 and 17, Torizuka does not disclose the shared set of data lines includes eighteen data lines. However, data lines for displaying image data for display panel including eighteen data lines is well known and widely used as admitted in the AAPA [0006]

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide eighteen data lines to carry RGB image signal in the display system of Torizuka which is well known and widely used as admitted in the AAPA [0006].

9. Claims 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Torizuka in view of Ahmed et al. (6,774,912).

In reference to claim 10, Torizuka discloses all the limitations except a multiplexer configured to select data for one of the parallel panel and a RGB panel.

Ahmed discloses a multiplexer configured to select data for multiple display panels (Fig. 1; col. 4, lines 62-67).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the multiplexer to select display data for multiple display devices in the display system of Torizuka as taught by Ahmed to provide switching signals to the display data for the first display in the first display period and the second display or the second for the second display device.

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Torizuka in view of Kurashima et al. (U.S Patent No 6,954,184), hereinafter Kurashima.

In reference to claim 18, Torizuka does not disclose the display system is used for a cellular phone.

Kurashima discloses a cellular phone having primary and secondary display panels

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the display system of Torizuka in the cellular phone of Kurashima in order to achieve the benefit of providing double-display cellular phone includes a main display on which information can be observed while the cellular phone is unfolded and a sub-display for displaying a caller in order that the caller, mail reception, and the time can be determined while the cellular phone is folded.

### ***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DUC Q DINH whose telephone number is (571) 272-7686. The examiner can normally be reached on Mon-Fri from 8:00.AM-4:00.PM.


Art Unit: 2674

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DUC Q DINH  
Examiner  
Art Unit 2674

DQD  
March 10, 2006



RICHARD HJERPE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600